

CLAIMS

WHAT IS CLAIMED IS:

1. A method of acquiring a seismic survey in which a network of seismic acquisition and communication modules includes at least one high precision clock and at least one clock of less precision wherein said clock of less precision is synchronized to said high precision clock by transmission of one or more synchronization signals and one or more of said seismic acquisition and communication modules contains a global positioning system receiver capable of computing its position and time from a received global positioning system signal.
2. A method as in claim 1 wherein at least one of said global positioning system receivers receives assistance in computing its position and time from a master global positioning system receiver within said network.
3. A method as in claim 2 wherein said master global positioning system receiver communicates information to other said global positioning system receivers within the said network to aid them in their reception of satellite signals and in their computation of times based on said satellite signals.
4. A method as in claim 2 wherein said master global positioning system receiver receives satellite tracking information from at least one of said global positioning system receivers.
5. A method as in claim 2 wherein said master global positioning system receiver computes the position coordinates of at least one of said global positioning system receivers utilizing satellite tracking information gathered by said receiver and communicated to it via an intervening network.

6. A method as in claim 5 in which said master global positioning system receiver communicates said position coordinates of said global positioning system receiver to said receiver via said intervening network.
7. A method as in claim 3 wherein said information includes the current and future locations and identifications of available satellites.
8. A method according to claim 2 in which said global positioning system receivers transmit accumulated received GPS signals and derived information to said master global positioning system receiver and in which said master global positioning system receiver processes said signals and information to determine the best estimates of positions and communicates these back to said receivers.
9. A method according to claim 8 in which said global positioning system receivers utilize the received best estimates of positions to compute best estimates of global positioning system time utilizing signals received from one or more satellites.
10. A seismic signal acquisition and processing assembly comprising:
- a) a central control module having a master clock; and,
 - b) a plurality of data acquisition and communication modules having at least one high precision clock and one or more clocks of less precision;
 - c) said control module and said data acquisition and communication modules being connected in a cooperative network assembly; and,
 - d) a master global positioning system receiver assembly located within said network assembly.
11. A seismic signal acquisition and processing assembly according to claim 10 in which one or more of said global positioning system receivers is capable of receiving and utilizing assistance in satellite tracking or in computation of position coordinates from said master global positioning system receiver assembly.

12. A seismic signal acquisition and processing assembly according to claim 10 in which said master global positioning system receiver assembly is capable of providing to one or more of said global positioning system receivers assistance in satellite tracking or in computation of the position coordinates of said receivers.